IN THE CLAIMS

Claims 1-38 (cancelled).

Claim 39 (currently amended): A process for determining properties of individual building blocks of a material library disposed in a substrate, the process comprising:

simultaneously measuring, with a first sensor, a first parameter of each building block; and

determining, automatically by a data processing system, which of the build blocks to include in a subset of the building blocks~~, based on results of the measurements of the first parameter~~ by comparing the first parameter with a predetermined limit value, the subset including fewer than all of the building blocks measured with the first sensor; and

measuring, with a further sensor, a further parameter of each of the building blocks in only the subset.

Claim 40 (cancelled)

Claim 41 (currently amended): A process according to claim 39 further comprising, before the simultaneous measuring step, a ~~preceding~~ step of producing the material library.

Claim 42 (currently amended): A process according to claim 39 further comprising, before the simultaneous measuring step, a ~~preceding~~ step of introducing a starting material to the building blocks for carrying out a chemical or physical or chemical and physical conversion of the starting material and obtaining for each building block an effluent stream containing a conversion product and/or the starting material.

Claim 43 (previously presented): A process according to claim 42 wherein the further parameter is measured in the respective effluent streams.

Claim 44 (previously presented): A process according to claim 42 wherein a portion of each effluent stream is passed to the further sensor via a sniffing capillary positioned in the effluent stream by means of a suitable drive means.

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Claim 45 (previously presented): A process according to claim 44 wherein the drive means is controlled automatically by the data processing system.

Claim 46 (cancelled)

Claim 47 (previously presented): A process according to claim 39 wherein the first sensor is based on color detection using a chemical indicator.

Claim 48 (previously presented): A process according to claim 39 wherein the first parameter is a temperature or a temperature change measured by the first sensor via infrared thermography.

Claim 49 (cancelled)

Claim 50 (previously presented): A process according to claim 39 wherein the first sensor is an infrared camera that determines the temperatures of the building blocks simultaneously.

Claim 51 (currently amended): A process according to claim 39 wherein the further sensor is based on a method selected from the group ~~comprising~~ consisting of mass spectrometry, gas chromatography, gas chromatography/mass spectroscopy, Raman spectroscopy, and FT-IR spectroscopy.

Claim 52 (previously presented): A process according to claim 39 wherein the material library is disposed in a substrate that comprises a tube bundle reactor or heat exchanger and has channels in which the building blocks are located.

Claim 53 (previously presented): A process according to claim 39 wherein the material library is disposed in a substrate comprising a block of a solid material which has channels.

Claim 54 (previously presented): A process according to claim 39 wherein the building blocks have catalytic properties.

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Claim 55 (previously presented): A process according to claim 54 wherein the building blocks are heterogeneous catalysts and/or their precursors.

Claim 56 (previously presented): A process according to claim 55 wherein the building blocks are inorganic heterogeneous catalysts and/or their precursors.

Claim 57 (previously presented): A process according to claim 54 wherein the building blocks are solid catalysts or supported catalysts and/or their precursors.

Claim 58 (previously presented): A process according to claim 57 wherein each building block is present as a catalyst bed, tube-wall coating or auxiliary support coating.

Claim 59 (previously presented): A process according to claim 54 wherein the first parameter is indicative of the activity of the respective building blocks.

Claim 60 (previously presented): A process according to claim 54 wherein the further parameter is indicative of the selectivity of the respective building blocks.

Claim 61 (previously presented): A process according to claim 39 wherein the first parameter is a measure of catalysis of a reaction selected from:

decomposition of nitrogen oxides, the synthesis of ammonia, the oxidation of ammonia, oxidation of hydrogen sulphide to sulphur, oxidation of sulphur dioxide, direct synthesis of methylchlorosilanes, oil refining, oxidative coupling of methane, methanol synthesis, hydrogenation of carbon monoxide and carbon dioxide, conversion of methanol to hydrocarbons, catalytic reforming, catalytic cracking and hyrdrocracking, coal gasification and liquefaction, heterogeneous photocatalysis, synthesis of ethers, in particular MTBE and TAME, isomerizations, alkylations, aromatizations, dehyrogenations, hydrogenations, hydroformylations, selective or partial oxidations, aminations, halogenations, nucleophilic aromatic substitutions, addition and elimination reactions, dimerizations, oligomerizations and metathesis polymerizations, enantioselective catalysis and biocatalytic reactions.

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Claim 62 (currently amended): An apparatus comprising:

means for receiving building blocks;

means for introducing a starting material to the building blocks;

a first sensor for measuring a first parameter of the building blocks;

a second sensor for measuring a second parameter of only a subset of the building blocks, the subset including fewer than all of the building blocks; and

a data processing device that selects the building blocks to be included in the subset ~~based on results of measurements of the first parameter obtained by the first sensor~~ by comparing the first parameter with a predetermined limit value.

Claim 63 (previously presented): An apparatus according to claim 62 wherein the first sensor is for measuring a temperature or a temperature change.

Claim 64 (previously presented): An apparatus as defined in claim 62 wherein the first sensor is based on color detection using a chemical indicator.

Claim 65 (previously presented): An apparatus according to claim 62 wherein the first sensor is an infrared camera.

Claim 66 (currently amended): An apparatus according to claim 62 wherein the second sensor is based on a method selected from the group ~~comprising~~ consisting of mass spectrometry, gas chromatography, gas chromatography/mass spectroscopy, Raman spectroscopy, and FT-IR spectroscopy.

Claim 67 (previously amended): An apparatus according to claim 66 wherein the second sensor is a quadrupole mass spectrometer.

Claim 68 (previously presented): An apparatus according to claim 62 further comprising a drive means and a sniffing capillary, the drive means being configured to position the sniffing capillary to receive the effluent stream of each building block of the subset, and the sniffing capillary being configured to conduct the effluent streams to the second sensor.

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Claim 69 (previously presented): An apparatus according to claim 62 wherein the means for receiving has a planar arrangement having a wire grid or foamed ceramic.

Claim 70 (previously presented): An apparatus according to claim 62 further comprising a housing in which the means for receiving is disposed.

Claim 71 (previously presented): An apparatus according to claim 70 further comprising means for heating and/or cooling the housing.

Claim 72 (previously presented): An apparatus according to claim 70 wherein the housing has an IR-transparent window, and an infrared camera is disposed outside the housing in front of the IR-transparent window.

Claim 73 (previously presented): An apparatus according to claims 62 wherein the means for receiving comprises a block made of electrically conductive material with channels, said block being heatable by resistance heating.

Claim 74 (previously presented): An apparatus according to claim 73 wherein each channel comprises a carrier.

Claim 75 (previously presented): An apparatus as defined in claim 74 wherein the carriers are synthesized into the channels.

Claim 76 (previously presented): An apparatus according to claim 74 wherein each carrier and/or channel supports a building block.

Claim 77-78 (cancelled)

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